

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions of claims in the application.

LISTING OF CLAIMS:

1. (currently amended) A gas or liquid flow sensor, comprising:

a flexible substrate;

a flexible transducer ~~affixed to~~ formed on the substrate;

at least one flexible lead connecting the substrate to a mounting portion of the sensor; and

first and second electrical contacts in electrical communication with the transducer;

wherein the substrate ~~is~~ and the flexible lead are displaceable in a presence of a stream of moving gas or liquid causing flexure of the transducer and a changing ~~the~~ an electrical value of the transducer.
2. (previously presented) A sensor according to claim 1 wherein a protective covering covers at least a portion of the flexible transducer.
3. (previously presented) A sensor according to claim 1 wherein the gas is air.
4. (canceled).
5. (previously presented) A sensor according to claim 1 wherein the flexible transducer comprises a resistive ink.
6. (canceled).
7. (canceled).

8. (currently amended) A sensor according to claim 1 wherein[;]

the first and second electrical contacts are affixed to a first side of the flexible substrate;

and

a third electrical contact is affixed to the second side of the flexible substrate, said third electrical contact being in electrical communication with the first electrical contact.

9. (canceled).

10. (canceled).

11. (currently amended) A sensor according to claim 1, disposed in a device for detecting inhalation.

12. (canceled).

13. (canceled).

14. (currently amended) A sensor according to claim 1 wherein at least one of the first and second electrical contacts are affixed to a the mounting portion ~~of the flexible substrate~~.

15. (currently amended) A sensor according to claim 1 wherein the electrical value of the flexible transducer changes relative to the flexure of at least the flexible substrate.

16. (currently amended) A sensor according to claim 1 wherein the flexible substrate substantially retains to an original orientation when a bending force ~~impinging~~ impinging the flexible substrate is removed.

17. (previously presented) A sensor according to claim 1 wherein the flexible substrate is made of polyimide.

18. (previously presented) A sensor according to claim 1 wherein the sensor forms at least a portion of a one-way valve in a stream of moving gas.

19. (withdrawn) A sensor for detecting inhalation, comprising:

a flexible substrate;

a flexible transducer affixed to the substrate and

a first and second electrical contacts in electrical communication with the transducer;

wherein the substrate is displaceable in the presence of a stream of moving air caused by inhalation, the displacement of the substrate causing flexure of the transducer and changing the electrical value of the transducer.

20. (withdrawn) A sensor according to claim 19 wherein a protective covering covers at least a portion of the flexible transducer.

21. (withdrawn) A sensor according to claim 20 wherein the protective covering substantially covers the flexible transducer and the first and second electrical contacts.

22. (withdrawn) A sensor according to claim 19 wherein the flexible transducer comprises a resistive ink.

23. (canceled)

24. (canceled)

25. (withdrawn) A sensor according to claim 19 wherein:

the first and second electrical contacts are affixed to a first side of the flexible substrate;

a third electrical contact is affixed to a second side of the flexible substrate, said third electrical contact is in electrical communication with the first electrical contact.

26. (canceled)

27. (canceled)

28. (withdrawn) A sensor according to claim 19, further comprising an air inlet-covering portion.

29. (withdrawn) A sensor according to claim 19 wherein the first and second electrical contacts are affixed to the mounting portion.

30. (withdrawn) A sensor according to claim 29 wherein the first and second electrical contacts are affixed to the mounting portion.

31. (withdrawn) A sensor according to claim 19 wherein the electrical value of the flexible transducer changes relative to the flexure of the flexible substrate.

32. (canceled)

33. (canceled)

34. (withdrawn) A sensor according to claim 19 disposed in a device for delivering medication, the device comprising:

an airway having an air inlet;

at least a portion of the sensor positioned in the airway;

a reservoir for containing medication;

a dispensing apparatus connected to said reservoir; and;

a controller electrically connected to the sensor and the dispensing apparatus.

35. (withdrawn) A device for delivering medication, comprising:

a) an air inlet;

b) an airway in pneumatic communication with the air inlet;

c) a sensor for detecting movement of air, the sensor being positioned in the airway proximate the air inlet such that the sensor is effective to selectively close the air inlet;

d) a reservoir for containing medication;

e) a pump/valve in pneumatic communication with the reservoir;

f) an aerosolization spray means in pneumatic communication with the pump/valve;

g) a mouthpiece in pneumatic communication with the airway and the aerosolization spray means;

h) an electrical power supply;

i) a controller portion in electrical communication with the power supply, sensor, pump/valve and aerosolation means; and

j) wherein:

i) air flowing into the airway from the air inlet displaces the sensor, changing the electrical value of the sensor;

ii) the controller portion detects the change in electrical value of the sensor and actuates the pump/valve;

iii) the pump/valve urges medication to flow from the reservoir to the aerosolation means;

iv) the aerosolation means aerosolizes the medication; and

v) wherein the air flowing into the airway is combined with the aerosolized medication in the mouthpiece for delivery to a patient.

36. (withdrawn) A device according to claim 35 wherein the sensor is placed in electrical communication with the controller portion by means of at least one rivet.

37. (withdrawn) A device according to claim 35 wherein the sensor is placed in electrical communication with the controller portion by means of conductive adhesive.

38. (withdrawn) A device according to claim 35, further comprising an air shield positioned proximate the sensor to direct the air flowing into the airway from the air inlet toward the sensor.

39. (withdrawn) A device according to claim 35 wherein the sensor cooperates with the air inlet to act as a one-way valve.

40. (withdrawn) A device for delivering medication, comprising:

- a) an air inlet;
- b) an airway in pneumatic communication with the air inlet;
- c) a sensor for detecting movement of air, the sensor being positioned in the airway proximate the air inlet such that the sensor is effective to selectively close the air inlet;
- d) a reservoir for containing medication;
- e) a pump/valve in pneumatic communication with the reservoir;
- f) an electrohydrodynamic aerosolation spray means in pneumatic communication with the pump/valve;
- g) a mouthpiece in pneumatic communication with the airway and the electrohydrodynamic aerosolation spray means;
- h) an electrical power supply;
- i) a controller portion in electrical communication with the power supply, sensor, pump/valve and electrohydrodynamic aerosolation means; and
- j) wherein:

- i) air flowing into the airway from the inlet displaces the sensor, changing the electrical value of the sensor;
- ii) the controller portion detects the change in electrical value of the sensor and actuates the pump/valve;
- iii) the pump/valve urges medication to flow from the reservoir to the electrohydrodynamic aerosolation means;
- iv) the electrohydrodynamic aerosolation means aerosolizes the medication; and
- v) wherein the air flowing into the airway is combined with the aerosolized medication in the mouthpiece for delivery to a patient.

41. (withdrawn) A device according to claim 40 wherein the sensor is placed in electrical communication with the controller portion by means of at least one rivet.

42. (withdrawn) A device according to claim 40 wherein the sensor is placed in electrical communication with the controller portion by means of conductive adhesive.

43. (withdrawn) A device according to claim 40, further comprising an air shield positioned proximate the sensor to direct the air flowing into the airway from the air inlet toward the sensor.

44. (withdrawn) A device according to claim 40 wherein the sensor cooperates with the air inlet to act as a one-way valve.

45. (withdrawn) A device according to claim 34 wherein said dispensing apparatus comprises an electrodynamic aerosolation apparatus.

46. (new) A sensor according to claim 1 wherein the flexible transducer includes a portion formed on the flexible lead.

47. (new) A sensor according to claim 1 wherein the flexible substrate and flexible lead are integral to one another.

48. (new) A sensor according to claim 1 wherein the electrical value of the flexible transducer changes relative to the flexure of the flexible substrate and the flexible lead.